

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. - 32. (canceled).

33. (currently amended): The automatic guide apparatus for traffic facilities according to claim 30, further comprising: An automatic guide apparatus for traffic facilities, comprising:

an input device for obtaining the circumstances around the traffic facilities to be operated as an image and a voice;

a database having image data and voice data in connection with the traffic facilities stored in advance;

a comparison device for comparing the image data and the voice data obtained by said input device with the image data and voice data stored in said database;

a recognition device for recognizing and specifying, where the results obtained by comparing the image data and the voice data coincided, the contents of the data; an output device for informing an operator of the results recognized and specified by the recognition device in a letter of character, an image or a voice;

a storage device which, where the image data and the voice data corresponding to the objects obtained by said input device are not present within said database, make the image data or the voice data corresponding to new objects correspond to a position on the map to newly store them in said database;

a data update device which, where the image data and the voice data corresponding to the objects are different from the image data and the voice data stored in said database, updates them to new image data and voice data to store them in said database;

a judgment device for carrying out some judgment on the basis of the matter recognized or specified by said recognition device to inform an operator of directions based on the judged results in a letter or character, an image or a voice by said output device and to direct said output device of a fixed action on the basis of the judged results and automatically actuate a brake device or a driving device; and

a plane development processing device comprising: a plane image conversion device for converting perspective image data with respect to the circumstances around the traffic facilities obtained by said input device into plane image data having a perspective sense eliminated; and

a plane image recognition device for recognizing and specifying, on the basis of results obtained by comparing the converted plane image data with the image data stored in the database by said comparison device, the contents of said data;~~an image content measuring device for various space physical amounts in connection with the objects recognized and specified by said plane image recognition device.~~

34. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 33, further comprising: a plane development processing device comprising an image content measuring device for measuring various space physical amounts in connection with the objects recognized and specified by said plane image recognition device.

35. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 33, wherein said plane image conversion device has a function of converting image data in the whole periphery of 360 degrees about the circumstances around the traffic facilities obtained by said input device.

36. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 33, wherein a traffic information detection device for obtaining the circumstances around the traffic facilities as image data or measuring data is installed on the operating route of the traffic facilities so as to enable receiving the image data or measuring data obtained by the traffic information detection device.

37. ((previously presented): The automatic guide apparatus for traffic facilities according to Claim 36, wherein said traffic information detection device has a graphic device for making a computer graphic on the basis of the image data and measuring data obtained.

38. ((previously presented): The automatic guide apparatus for traffic facilities according to Claim 33, further comprising: a position relation recognition device comprising an image obtaining portion for obtaining a picture image by the input device mounted on the traffic facilities, an image temporarily recording portion for recording the obtained picture image for a certain period, a clue-point automatic extraction portion for automatically extracting a clue point

for taking a corresponding point within the image, a corresponding-point detection portion for taking out more than two images different in distance to seek for corresponding points of a plurality of clue points in the images, an input-device positional direction measuring portion for operating a position and a direction of the input device from a plurality of corresponding points detected, and an actual-measurement scale conversion portion for converting a relative distance value of a three dimensional coordinate of the input device position sought into an absolute distance value using an actual measurement value.

39. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 38, wherein to said position relation recognition device is added a corresponding point three dimensional measuring portion for 3-dimension measuring a plurality of clue points from corresponding points in the image of a plurality of clue points to obtain a relation between them and a position of the input device as a three dimensional coordinate.

40. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 39, wherein to said position relation recognition device is added a three dimensional data recording portion for recording a three dimensional coordinate of a corresponding point obtained by said corresponding point three dimensional measuring portion.

41. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 40, wherein to said position relation recognition device are added a three dimensional data read-out portion for reading out three dimensional data of a clue point accumulated in said three dimensional data recording portion obtained by being operated from the three dimensional data recording portion at the time of operating the peripheries after the succeeding time, and a corresponding point comparison portion for comparing those data with image data obtained at the time of operations after the succeeding time to obtain a coincident point to thereby enhance operation accuracy of a position of the traffic facilities.

42. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 41, wherein to said position relation recognition device are added an absolute coordinate conversion portion for selecting an object whose absolute coordinate is known to a corresponding point to impart an absolute coordinate to three dimensional data obtained in said input device position direction measuring portion and said corresponding point three dimensional

measuring portion; and a coordinate synthesizing portion for synthesizing a three dimensional coordinate of a clue point present in a certain area to an absolute coordinate system.

43. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 42, wherein to said position relation recognition device are added a name attribute adding portion for corresponding a name and an attribute of a clue point to position data of a clue point to record and store them, and adding names and attributes of the objects to which the clue points belong to the coordinate data of said clue points; and a database for relating a coordinate, a name and an attribute of the added clue point into a map to write, record and store them.

44. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 43, wherein to said position relation recognition device is added a display portion for suitably displaying and informing an operator of said various operation results.

45. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 43, wherein to said position relation recognition device are added a circumstances judgment portion for automatically judging the circumferences of the traffic facilities from the periphery and the position relation of the traffic facilities to be operated by said various operation results; and an automatic control portion for automatically carrying out an operation automatically suited to an object of the traffic facilities using the results of obtained by judging the circumstances.

46. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 45, wherein to said position relation recognition device are added a plural-input device image obtaining portion for, a plurality of input devices being installed, taking in images, and superposing a part or the whole of a field of view of the respective input devices; and a calibration portion for, using both three dimensional distance measurement calculated from a difference in view caused by an input movement distance by a single input device and three dimensional distance measurement calculated from a distance in view between the input devices by a plurality of input devices, with three dimensional distance data of clue points obtained by a view superposing system of a plurality of input devices as a reference length, calibrating three dimensional distance data obtained by a movement distance difference-in-view by the single input device movement to thereby convert it into an absolute distance.

47. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 46, wherein to said position relation recognition device are added a shape attribute display portion for reproducing a three dimensional space for arranging and expressing a three dimensional shape of an object to which a clue point belongs in a three dimensional computer graphic at a proper position in a coordinate system defined in a display screen to enable displaying even a name, an attribute, other objects, and the own vehicle in their display images; and a user interface portion for touching by a hand or clicking by a mouse on the image of the three dimensional computer graphic showing various objects expressed in said display image, or displaying only the actual image, and touching by a hand or clicking by a mouse the intended object on the displayed actual picture to designate the intended object, thereby inputting data related to the intended object which displays and directs a name, a coordinate, a shape, and attributes of other related data of the object to enable directing the directed intended object various operations and actions.

48. (previously presented): The automatic guide apparatus for traffic facilities according to Claim 47, wherein to said position relation recognition device is added an external communication portion which is connected to other traffic facilities or other communication points through communication lines to receive and deliver information.

49. (new): The automatic guide apparatus for traffic facilities according to Claim 33, wherein one or a plurality of devices are connected with other devices through communication lines.

50. (new): The automatic guide apparatus for traffic facilities according to Claim 33, said traffic facilities to be operated being vehicles traveling on the road surface including a motor vehicle, comprising: an input device for obtaining the circumstances around the own vehicle as an image or a voice; a database having image data or voice data in connection with the motor vehicle including road marks, road signs and traffic guide plates stored in advance; a comparison device for comparing the image data or the voice data obtained by said input device with the image data or voice data stored in said database; a recognition device for recognizing and specifying, where the results obtained by comparing the image data or the voice data coincided, the contents of the data; and an output device for informing a driver or an occupant of the results recognized and specified by the recognition device in a letter of character, an image or a voice.

51. (new): An automatic guide apparatus for traffic facilities, said traffic facilities to be operated being vehicles traveling on the track including a railroad train, comprising: an input device for obtaining the circumstances around the own vehicle as an image or a voice; a database having image data or voice data in connection with the railroad vehicles including track marks, track signs and track guide plates stored in advance; a comparison device for comparing the image data or the voice data obtained by said input device with the image data or voice data stored in said database; a recognition device for recognizing and specifying, where the results obtained by comparing the image data or the voice data coincided, the contents of the data; and an output device for informing a driver or an occupant of the results recognized and specified by the recognition device in a letter of character, an image or a voice.

52. (new): An automatic guide apparatus for traffic facilities, said traffic facilities to be operated being the ship body or vehicle body navigating the two dimensional or three dimensional without the track including a ship or an airplane, comprising: an input device for obtaining the circumstances around the own vehicle as an image or a voice; a database having image data or voice data in connection with the ship or the airplane including marks, signs, the shape of harbors and the shape of an airport stored in advance; a comparison device for comparing the image data or the voice data obtained by said input device with the image data or voice data stored in said database; a recognition device for recognizing and specifying, where the results obtained by comparing the image data or the voice data coincided, the contents of the data; and an output device for informing a driver or an occupant of the results recognized and specified by the recognition device in a letter of character, an image or a voice.